Specialist High Skills Major

*Sector-Specific Guide*

# Agriculture

DRAFT 2007–2008

reach every student

Ontario

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# A. Overview

The Specialist High Skills Majors (SHSM), launched in September 2006, are part of the Student Success Strategy initiative, which focuses on expanding quality learning opportunities and supporting success for all students. The SHSM is a ministry-approved specialized program that allows students to focus their learning on a specific economic sector while meeting the requirements for the Ontario Secondary School Diploma (OSSD). This career-focused program is also designed to help prepare students to make the transition from secondary school to apprenticeship training, college, university, or the workplace. An SHSM enables students to gain sector-specific skills and knowledge in the context of engaging, career-related learning environments and helps them focus on graduation and on pursuing their postsecondary goals.

The ministry has published the *Specialist High Skills Major Implementation Guide*, as well as sector-specific guides, like this one, for each of the SHSM economic sectors. Boards and schools are strongly encouraged to refer to the *SHSM Implementation Guide* along with the SHSM sector-specific guides when planning and implementing an SHSM.

This guide provides information about the five required components of the SHSM–Agriculture, sample pathways for the SHSM, examples of postsecondary programs in the sector, a list of resources, and profiles of the programs that were being offered in Ontario schools in 2007–08.

# B. Advantages of Earning a Specialist High Skills Major (SHSM) in Agriculture

The sales of primary agricultural products in Canada peaked at nearly $41 billion in 2002, double the levels of 15 years ago. Increased sales of Canadian agricultural products are closely associated with the rise in agricultural exports following the implementation of the North American Free Trade Agreement (NAFTA) in 1990.*

Currently, between 10 and 15 per cent of Ontario's food is grown locally. It is estimated that Ontario's food system can be 60 per cent local within five years if consumers support local farmers and food distribution systems in their efforts to reduce their "carbon footprint".†

The SHSM–Agriculture enables students to build a foundation of sector-focused knowledge and skills before graduating and entering a postsecondary destination, whether it be apprenticeship training, college, university, or an entry-level position in the workplace. Depending on local circumstances, the SHSM–Agriculture may be designed to have a particular focus – for example, on agricultural equipment or animal and crop science.

Pursuing the Specialist High Skills Major–Agriculture enables students to:

- customize their secondary school education to suit their interests and talents while meeting the requirements for the OSSD;
- select a bundle of 9 required credits focused on sector-specific knowledge and skills that are:
  - valued by the agricultural sector and postsecondary educational institutions;
  - designed to help prepare students for a postsecondary destination of their choice in this economic sector;
  - designed with the flexibility to allow students to shift between pathways (e.g., switch from a pathway leading to college to an apprenticeship pathway) or to discontinue the SHSM program should their career plans change in Grade 11 or 12;
- provide evidence of achievement of the required components of the SHSM (e.g., sector-recognized certifications) for prospective employers and postsecondary educational institutions;
- explore, identify, and refine career goals and make informed decisions about their postsecondary options;

* *Canadian Agriculture in 2005: A Tough Year in Review*, June 2006, Statistics Canada.
† Conservation Council of Ontario.

- take part in "reach ahead" experiences that will help them gain confidence in their ability to be successful, refine skills and work habits, and make an informed choice about future careers and next steps;
- develop Essential Skills and work habits that are required in the sector, and have their performance of those skills and work habits assessed and documented, using tools connected with the Ontario Skills Passport;
- access resources, equipment, and expertise that may not be available in their secondary school.

# C. Required Components for the SHSM–Agriculture

**Required Components for the SHSM–Agriculture**

1. a bundle of 9 Grade 11 and Grade 12 credits that includes:
   - (i) 4 agriculture major credits that provide sector-specific knowledge and skills;
   - (ii) 3 other required credits from the Ontario curriculum, in English, mathematics, and science, in which some expectations are met through learning activities contextualized to the agriculture sector;
   - (iii) 2 cooperative education credits that provide authentic learning experiences in a workplace setting, enabling students to refine, extend, apply, and practise sector-specific knowledge and skills
2. 6 sector-recognized certifications and/or training courses/programs (3 compulsory and a choice of 3 from a list of additional certifications and training courses/programs)
3. experiential learning activities within the sector
4. "reach ahead" experiences connected with the student's postsecondary pathway
5. development of Essential Skills and work habits required in the sector, and use of the Ontario Skills Passport (OSP) for purposes of documentation

Students earning an SHSM receive an OSSD with the red SHSM seal as well as an SHSM Record that documents the student's achievement of the required components.

The five required components for an SHSM diploma designation are designed to give students a rich and varied range of curriculum-based and experiential learning experiences, as a foundation for making a successful transition to their chosen postsecondary education or training program or occupation.

Local circumstances, such as facilities and equipment, staff qualifications, partnerships, and agreements, determine how the SHSM's required components can be offered to students. Depending on these circumstances, the components may be delivered in a secondary school, college, training centre, other approved site, or a combination of these delivery settings. See the *SHSM Implementation Guide* for more information on delivery models.

**No substitutions for any of the five required components of an SHSM are permitted.**

## 1. Bundled Credits

Each SHSM has a bundle of credits that consists of major credits, other required credits, and cooperative education credits. The bundle for the SHSM–Agriculture consists of:

i) 4 major credits;

ii) 3 other required credits;*

iii) 2 cooperative education credits.

The credits in the bundle prepare students for one of four postsecondary options – apprenticeship training, college, university, or the workplace.

### i) Major credits

Each SHSM has four major credits that enable students to build a foundation of sector-focused knowledge and skills. The major credits may be:

- credits for Ontario curriculum courses;
- credits for ministry-approved locally developed courses (LDCs); or
- dual credits, which are subject to their own approval policies and procedures.

An SHSM can be designed to focus on a specific area within the given sector – for example, the SHSM–Agriculture can focus on agricultural equipment, animal and crop science, or some other area of agriculture. This focus is achieved through the selection of the four major credits in the bundle. Depending on local circumstances, boards may elect to offer one or more variants of the SHSM in a given sector, each with a particular area of focus. Where a choice of focus areas is offered, students are required to select *one*.

### ii) Other required credits

In addition to the major credits, each SHSM includes *other required credits* from the Ontario curriculum. (In the SHSM–Agriculture, the other required credits are in English, mathematics, and science.) These courses are delivered by the teachers of the required subjects and involve the use of contextualized learning activities (CLAs), which enable students to connect their learning in these courses to their SHSM sector. CLAs are based on curriculum expectations from the required course. One or more CLAs, totalling a minimum of six hours in length, must be incorporated into each required course. (A CLA template is provided in Appendix A.)

### iii) Cooperative education credits

Cooperative education provides authentic learning experiences in a workplace setting that enable students to refine, extend, apply, and practise the sector-specific knowledge and skills acquired in the bundle of credits. Each SHSM requires that students complete a minimum of two credits in cooperative education linked to the major credits. (More than two credits are recommended, if the student's timetable permits.)



* SHSMs in other sectors may require 2, 3, or 4 "other" credits. For details, see the other sector-specific guides.

Students may earn their minimum of two cooperative education credits in Grade 11 and/or Grade 12, as a single credit in each grade or a double credit in one grade. (Students in the university pathway, however, are advised to complete their cooperative education credits in Grade 11, in order to allow room in their timetables in Grade 12 for credits needed to meet university entrance requirements.) Depending on local circumstances, students may have to complete their cooperative education credits through continuing education, in the summer, or through virtual cooperative education. See *Cooperative Education and Other Forms of Experiential Learning: Policies and Procedures for Ontario Secondary Schools, 2000*.

### Summary of the Required Credits in the Bundle for the SHSM–Agriculture

The 9 required credits in the bundle for the SHSM–Agriculture are identified in the table below. No substitutions for the credits in the bundle are allowed, and the credits must be at the specified grade level. School boards are required to submit for ministry approval their proposed pathway chart for each SHSM offered by their schools, indicating the credits in each bundle by pathway and, where applicable, by area of focus. Once a credit bundle is approved, the board may not change any of the credits in the bundle for that school year.

**Required Credits in the Bundle for the SHSM–Agriculture**

| Credits | Apprenticeship Training | | College | | University | | Workplace | |
|---|---|---|---|---|---|---|---|---|
| | Gr. 11 | Gr. 12 | Gr. 11 | Gr. 12 | Gr. 11 | Gr. 12 | Gr. 11 | Gr. 12 |
| **Agriculture Major*** | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| **English** | 1 | | 1 | | 1 | | | 1 |
| **Mathematics** | 1 | | | 1 | | 1 | 1 | |
| **Science** | 1 | | 1 | | 1 | | 1 | |
| **Cooperative Education** | 2 | | 2 | | 2 | | 2 | |
| **Total number of credits** | 9 | | 9 | | 9 | | 9 | |

* Multiple credits in the Ontario technological education curriculum allow additional instructional time for the practice and refinement of skills needed to develop student performance to the levels required for certification, entry into apprenticeship programs, or participation in school–work transition programs (see *The Ontario Curriculum, Grades 11 and 12: Technological Education, 2000*, page 6).

A pathways chart is given on page 15, showing subjects and courses that students could take to explore the SHSM in agriculture in Grades 9 and 10, and courses they would have to take in Grades 11 and 12 to complete this specialized program. Sample bundles of credits that would meet the requirements for the SHSM–Agriculture in two areas of focus – animal and crop science and agricultural equipment – are provided in the charts on pages 16–17.

## 2. Sector-Recognized Certification and Training

Sector-recognized certifications and training courses/programs, including those addressing safety, are important for students who are working towards the SHSM and provide them with an advantage when they are entering the workforce, whatever their chosen career goal may be.

Certification and training courses/programs must:

- be delivered by a certified trainer – a person recognized by the certification provider or by the sector as an authority. (This requirement does not apply to WHMIS.);
- include an assessment and evaluation component;
- include, wherever possible, documentation such as a certificate or other proof of completion for the student's portfolio and the student's SHSM Record. The SHSM Record will indicate the title of each certification earned or training course/program completed, the number of hours involved, and the date the certification/training was completed.

The SHSM in agriculture requires students to complete six (6) sector-recognized certifications and/or training courses/programs. Of these, three (3) are compulsory and the remaining three (3) are to be chosen from the list in the following chart. These requirements are summarized below.

**SHSM–Agriculture: Sector-Recognized Certification and Training**

| | | | |
|---|---|---|---|
| **Three (3)** compulsory | | | |
| Standard First Aid | Cardio-Pulmonary Resuscitation (CPR) | generic (i.e., not site-specific) instruction about the Workplace Hazardous Materials Information System (WHMIS) | |
| **Three (3)** from the list below | | | |
| basic electrics | basic hydraulics | chain saw safety* | equipment operation safety** |
| fall protection | grain grading | hazardous atmospheres and confined spaces** | large animal handling** |
| level 1 – fundamentals of the combine | level 2 – theory of combine settings and adjustments | lift truck training | livestock medicine |
| lockout procedures** | nutrient management | personal protective equipment in agriculture** | pesticide handling and safety |
| safe lifting | small engines maintenance | tractors and other self-propelled equipment** | |

***Note:*** Items that are capitalized are the *proper names* of specific certifications or training courses/programs that are appropriate for the SHSM. Items that are lowercased are names of the areas or categories within which specific certification or training courses/programs should be selected by the school or board.

* Health and safety training

** Occupational Health and Safety Guidelines for Farming Operations in Ontario, Ministry of Labour, June 2006 (www.labour.gov.on.ca/english/hs/pdf/farming_ohsg.pdf).

Boards and schools may provide opportunities for students to complete additional training.

**No substitutions for items in the above lists or changes in the *number* of required certifications and training courses/programs are permitted.**

## 3. Experiential Learning Activities

The SHSM experiential learning requirement consists of planned learning activities that take place outside the traditional classroom setting. Experiential learning, which can include job shadowing, job twinning, work experience, virtual work experience, and cooperative education (see Appendix B), enables students enrolled in the SHSM to find out about opportunities available to them in connection with the careers that interest them.

Experiential learning activities give students opportunities to explore, observe, participate in, and reflect on a variety of sector-specific experiences and careers. They also enable students to increase their awareness of, and develop, the Essential Skills and work habits required in the sector and to have their performance of those skills and habits assessed and documented, using tools connected with the Ontario Skills Passport. An experiential assignment or task could require students to identify examples of how the Essential Skills are applied in specific trades and administrative and management occupations (e.g., agriculture equipment mechanic, greenhouse operator, veterinarian) in an agriculture business.

Experiential learning opportunities could include:

- one-on-one observation of a cooperative education student at a placement in the agriculture sector (example of job twinning);
- a day-long, one-on-one observation of a skilled tradesperson in the agriculture sector (example of job shadowing);
- a one- or two-week work experience with a member of an industry association or a professional in the sector (example of work experience);
- the grooming of an animal (e.g., a dog, a cow or a horse) for a competition;
- the care of farm animals;
- a visit to a farmers' market or farm machinery supplier.

An experiential learning activity connected with the student's postsecondary pathway can be considered a "reach ahead" experience (see section 4, below). For example, job shadowing a skilled tradesperson in a local agriculture business would be an experiential learning activity for all students in an Agriculture SHSM, but it could also be a "reach ahead" experience for a student considering a career as such a tradesperson. Note, however, that the activity can be recorded *only once* on the student's SHSM Record – as either an experiential learning activity or a "reach ahead" experience. This restriction reflects the expectation, described earlier, that the student's SHSM program will offer a rich and varied range of experiential learning opportunities.

Cooperative education is also a form of experiential learning. However, for the purposes of the SHSM program requirements and the student's SHSM Record, the two cooperative education credits must be counted as part of the SHSM bundled credit requirement.

Experiential learning placements for students must be arranged by the school and must meet the following requirements:

- A placement must be assessed by a teacher before the student is assigned to it to ensure that the placement offers a positive learning environment and a safe workplace. (*See Cooperative Education and Other Forms of Experiential Learning: Policies and Procedures for Ontario Secondary Schools*, 2000. Available online at www.edu.gov.on.ca/eng/document/curricul/secondary/coop/cooped.pdf.)
- A placement must have Workplace Safety and Insurance Board coverage through the ministry or the workplace.(See Policy/Program Memorandum No. 76A, September 27, 2000; excerpted in Appendix B of the *SHSM Implementation Guide*.)

For more information consult *Live Safe! Work Smart! Appendix for Cooperative Education and Other Forms of Experiential Learning*, at www.livesafeworksmart.net/english/coop/coop_appdx.htm.

For a summary of the regulations governing age requirements for working in and/or visiting workplaces in Ontario, see Appendix C.

## 4. "Reach Ahead" Experiences

Students in the SHSM in agriculture must have learning experiences connected with their postsecondary pathway. "Reach ahead" experiences can range from visiting a college to investigate the program a student is considering, to sitting in on university classes in a student's field of interest, to discussing the postsecondary education, training, and experiences of someone in the occupation a student is interested in. These experiences can vary in length – from a few hours to the time necessary for a full course. Examples include:

- *Workplace:* performing a crop change in a greenhouse under the supervision of a greenhouse operator
- *Apprenticeship training:* completing an oil change on a tractor under the supervision of a mechanic
- *College:* observing and practising soil sample testing to determine the appropriate fertilizer rate under the supervision of an agronomist at a lab or local farm
- *University:* interviewing a veterinarian
- *All pathways:* attending a farm auction or a farm equipment show or an event such as the International Ploughing Match

Every "reach ahead" experience should have an assignment or task associated with it. For example, the assignment for a student considering an apprenticeship pathway could be to interview a tradesperson to discover details about his or her training, and to write a report summarizing the tradesperson's answers.

## 5. Development of Essential Skills and Work Habits, and Use of the Ontario Skills Passport (OSP) for Purposes of Documentation

Human Resources and Social Development Canada (HRSDC) has identified and validated the Essential Skills that people need for life, learning, and work. Essential Skills are foundational skills that make it possible to learn technical skills and other job- or workplace-specific skills. They are skills that enable people to perform tasks required in their jobs and to participate fully in the workplace and in the community. These Essential Skills are transferable from school to work, job to job, and sector to sector. The Ministry of Education and the Ministry of Training, Colleges and Universities have developed the Ontario Skills Passport (OSP) on the basis of the HRSDC's Essential Skills. The OSP also incorporates work habits that are beneficial not only for work but also for life and learning. The skills and work habits included in the OSP are as follows:

| Essential Skills | Work Habits |
|---|---|
| • Reading Text<br>• Writing<br>• Document Use<br>• Computer Use<br>• Oral Communication<br>*Numeracy*<br>• Money Math<br>• Scheduling or Budgeting and Accounting<br>• Measurement and Calculation<br>• Data Analysis<br>• Numerical Estimation<br>*Thinking Skills*<br>• Job Task Planning and Organizing<br>• Decision Making<br>• Problem Solving<br>• Finding Information | • Working Safely<br>• Teamwork<br>• Reliability<br>• Organization<br>• Working Independently<br>• Initiative<br>• Self-Advocacy<br>• Customer Service<br>• Entrepreneurship |

The Ontario Skills Passport provides clear descriptions of Essential Skills that are used in nearly all occupations and of work habits that are important for success in the workplace. The OSP provides a common language that helps students build competence and confidence and make connections between school and their prospective careers. The OSP also provides employers with a consistent method of assessing the student's demonstration of these skills and work habits in the workplace.

Sector representatives consulted on the development of the SHSMs emphasized the importance of the Essential Skills and work habits included in the OSP. Students pursuing an SHSM in agriculture track their development of Essential Skills and work habits in their OSP Work Plan throughout their experiential learning activities (including cooperative education placements and "reach ahead" experiences). In consultation with the teacher, employers assess each student's demonstration of Essential Skills and work habits identified in the OSP and record their assessments in the student's OSP Work Plan.

See the *SHSM Implementation Guide* for more information about the OSP and how it can be used in connection with an SHSM program. The OSP website (http://skills.edu.gov.on.ca) also offers resources for the use of the OSP in SHSM programs.

# D. Pathways for the SHSM–Agriculture

This section contains the following:

- ideas that schools and boards can use to promote awareness and exploration of the SHSM–Agriculture among students and to help students as they make the decision to specialize in this program
- a chart showing a pathways template for completing the SHSM–Agriculture
- charts that contain sample bundles of credits for the SHSM–Agriculture, with a focus on animal and crop science and agricultural equipment

## Strategies for Promoting and Suggestions for Planning the SHSM–Agriculture

### Grades 7 and 8: Awareness

The following are examples of strategies that boards and schools can use to build Grade 7 and 8 students' awareness of the SHSM program:

- organize field trips, competitions, and activities in the community that are specific to the SHSM
- host presentations or talks on careers with guest speakers and mentors from the sector
- hold a summer program sponsored by the sector before students enter secondary school
- organize experiences at a secondary school in the program related to this sector
- invite current SHSM–Agriculture students to share their experiences

### Grades 9 and 10: Exploration

Students who are considering pursuing the SHSM–Agriculture can be encouraged to enrol in the following courses to become better informed about careers and postsecondary options related to the agriculture sector:

- Integrated Technologies: A Grade 9 course recommended for all SHSM pathways that have a technological education focus. It provides students with opportunities to explore a variety of technologies, including agriculture technology, by engaging in activities related to them.
- Career Studies (compulsory) and Discovering the Workplace: Some of the expectations in these Grade 10 courses provide opportunities for students to explore occupations and other postsecondary options in the sector and to participate in experiential learning activities.

- Transportation Technology: Recommended for any Grade 10 student who is considering entering an SHSM in agriculture with a focus on agricultural equipment. It provides students with opportunities to explore transportation technology, including agricultural equipment technology, identify personal interests and aptitudes, and investigate the SHSM–Agriculture.

### Grades 11 and 12: Specialization

Students acquire the sector-specific knowledge and skills required to earn their OSSD with an SHSM–Agriculture by completing its five required components. Students and their parents/guardians are encouraged to consult with guidance counsellors and teachers to select the courses that will enable them to pursue their goals.

Agriculture sector contacts have identified knowledge of entrepreneurship and basic business practices as important for students as they prepare for careers in this sector. It is, therefore, recommended that in Grade 11 or 12 students do one of the following:

- complete an entrepreneurship course offered in the Ontario business studies curriculum
- pursue an extracurricular activity focused on entrepreneurship (e.g., participation in Junior Achievement's Company Program)

Students pursuing an apprenticeship pathway should consider the Ontario Youth Apprenticeship Program (OYAP), which enables them to start an apprenticeship while earning their OSSD.

## Pathways Template for the SHSM–Agriculture

• Shaded boxes – required credits in the bundle for the SHSM–Agriculture • (C) – compulsory credits for the OSSD • (R) – courses that are recommended in light of the student's pathway and career interests

| **Grade 9** *Exploration* | **Grade 10** *Exploration* | **Apprenticeship Training Pathway** *Specialization* | | **College Pathway** *Specialization* | | **University Pathway** *Specialization* | | **Workplace Pathway** *Specialization* | |
|---|---|---|---|---|---|---|---|---|---|
| | | **Grade 11** | **Grade 12** | **Grade 11** | **Grade 12** | **Grade 11** | **Grade 12** | **Grade 11** | **Grade 12** |
| An optional or a compulsory credit | An optional or a compulsory credit | An optional or a compulsory credit | An optional or a compulsory credit | An optional or a compulsory credit | An optional or a compulsory credit | An optional or a compulsory credit | An optional or a compulsory credit | An optional or a compulsory credit | An optional or a compulsory credit |
| (C) English | (C) English | (C) English | (C) English | (C) English | (C) English | (C) English | (C) English | (C) English | (C) English |
| (C) Mathematics | (C) Mathematics | (C) Mathematics | (R) Mathematics | (C) Mathematics | Mathematics | (C) Mathematics | Mathematics | (C) Mathematics | (R) Mathematics |
| (C) Science | (C) Science | Science *in either Gr. 11 or Gr. 12* | An optional or a compulsory credit *in either Gr. 11 or Gr. 12* | Science *in either Gr. 11 or Gr. 12* | An optional or a compulsory credit *in either Gr. 11 or Gr. 12* | Science | (R) Science | Science | (R) Science or an optional or a compulsory credit |
| (C) Geography of Canada | (C) Canadian History | **Agriculture Major** | **Agriculture Major** | **Agriculture Major** | **Agriculture Major** | **Agriculture Major** | **Agriculture Major** | **Agriculture Major** | **Agriculture Major** |
| (C) Core French | (C) Career Studies/ Civics | **Agriculture Major** | **Agriculture Major** | **Agriculture Major** | **Agriculture Major** | **Agriculture Major** | **Agriculture Major** | **Agriculture Major** | **Agriculture Major** |
| (C) Healthy Active Living Education | (C) The Arts | May be used as a (C) Cooperative Education (2 credits) *in either Gr. 11 or Gr. 12* | | May be used as a (C) Cooperative Education (2 credits) *in either Gr. 11 or Gr. 12* | | May be used as a (C) Cooperative Education (2 credits) *recommended in Gr. 11** | | May be used as a (C) Cooperative Education (2 credits) *in either Gr. 11 or Gr. 12* | |
| (R) Integrated Technologies | (R) Transportation Technology | (R) Business Studies or an optional or a compulsory credit | (R) Geography or Cooperative Education | (R) Business Studies or an optional or a compulsory credit | (R) Geography or Cooperative Education | (R) Science | (R) Mathematics | (R) Business Studies or an optional or a compulsory credit | (R) Geography or Cooperative Education or an optional or a compulsory credit |

* Students in the university pathway are advised to complete their cooperative education credits in Grade 11, in order to allow room in their timetables in Grade 12 for credits needed to meet university entrance requirements.

## Sample Bundles of Credits for the SHSM–Agriculture

### (a) Focus on Animal and Crop Science

- Shaded boxes – required credits in the bundle for the SHSM–Agriculture
- (C) – compulsory credits for the OSSD
- (R) – courses that are recommended in light of the student's pathway and career interests
- The letters C, E, M, O, and U at the end of course codes indicate the following types of courses: C – college preparation; E – workplace preparation; M – university/college preparation; O – open; U – university preparation
- A list of **all** courses that are approved for inclusion in the bundle of credits for an SHSM–Agriculture is available on the Ministry of Education website, at www.edu.gov.on.ca.

| Apprenticeship Training Pathway | | College Pathway | | University Pathway | | Workplace Pathway | |
|---|---|---|---|---|---|---|---|
| **Grade 11** | **Grade 12** | **Grade 11** | **Grade 12** | **Grade 11** | **Grade 12** | **Grade 11** | **Grade 12** |
| An optional or a compulsory credit | An optional or a compulsory credit | An optional or a compulsory credit | An optional or a compulsory credit | An optional or a compulsory credit | An optional or a compulsory credit | An optional or a compulsory credit | An optional or a compulsory credit |
| (C)<br>ENG3E<br>English | (C)<br>ENG4E<br>English | (C)<br>ENG3C<br>English | (C)<br>ENG4C<br>English | (C)<br>ENG3U<br>English | (C)<br>ENG4U<br>English | (C)<br>ENG3E<br>English | (C)<br>ENG4E<br>English |
| (C)<br>MBF3C<br>Foundations for College Mathematics | (R)<br>MAP4C<br>Foundations for College Mathematics | (C)<br>MCF3M<br>Functions and Applications | MCT4C<br>Mathematics for College Technology | MCR3U<br>Functions | MHF4U<br>Advanced Functions | MEL3E<br>Mathematics for Work and Everyday Life | (R)<br>MEL4E<br>Mathematics for Work and Everyday Life |
| SNC3E<br>Science *or*<br>SBI3C<br>Biology | (R)<br>SPH4C<br>Physics | SNC3M<br>Science *or*<br>SBI3C<br>Biology | (R)<br>SPH4C<br>Physics | SCH3U<br>Chemistry | (R)<br>SPH4U<br>Physics | SNC3E<br>Science | (R)<br>GLN4O<br>Navigating the Workplace |
| **Agriculture Major: Animal and Crop Science**<br>SAN33<br>(LDC)* | **Agriculture Major: Animal and Crop Science**<br>SCH4C<br>Chemistry | **Agriculture Major: Animal and Crop Science**<br>SAN33<br>(LDC)* | **Agriculture Major: Animal and Crop Science**<br>SCH4C<br>Chemistry | **Agriculture Major: Animal and Crop Science**<br>SAN33<br>(LDC)* | **Agriculture Major: Animal and Crop Science**<br>SCH4U<br>Chemistry | **Agriculture Major: Animal and Crop Science**<br>SAN33<br>(LDC)* | **Agriculture Major: Animal and Crop Science**<br>SNC4E<br>Science |
| **Agriculture Major: Animal and Crop Science**<br>SHX33<br>(LDC)* | **Agriculture Major: Animal and Crop Science**<br>SNC4E<br>Science | **Agriculture Major: Animal and Crop Science**<br>SHX33<br>(LDC)* | **Agriculture Major: Animal and Crop Science**<br>SNC4M<br>Science | **Agriculture Major: Animal and Crop Science**<br>SBI3U<br>Biology | **Agriculture Major: Animal and Crop Science**<br>SBI4U<br>Biology | **Agriculture Major: Animal and Crop Science**<br>SHX33<br>(LDC)* | **Agriculture Major: Animal and Crop Science**<br>CGR4E<br>Environment and Resource Management |
| May be used as a (C)<br>Cooperative Education (2 credits)<br>*in either Gr. 11 or Gr. 12* | | May be used as a (C)<br>Cooperative Education (2 credits)<br>*in either Gr. 11 or Gr. 12* | | May be used as a (C)<br>Cooperative Education (2 credits)<br>*recommended in Gr. 11*** | | May be used as a (C)<br>Cooperative Education (2 credits)<br>*in either Gr. 11 or Gr. 12* | |
| (R)<br>BDI3C<br>Entrepreneurship: The Venture | (R)<br>CGR4E<br>The Environment and Resource Management | (R)<br>BDI3C<br>Entrepreneurship: The Venture | (R)<br>CGR4M<br>The Environment and Resource Management | (R)<br>SPH3U<br>Physics | (R)<br>MDM4U<br>Mathematics of Data Management | (R)<br>BAI3E<br>Accounting Essentials | (R)<br>BOG4E<br>Business Leadership: Becoming a Manager |

* For a summary of this course, see Appendix D.

** Students in the university pathway are advised to complete their cooperative education credits in Grade 11, in order to allow room in their timetables in Grade 12 for credits needed to meet university entrance requirements.

## Sample Bundles of Credits for the SHSM–Agriculture

### (b) Focus on Agricultural Equipment

- Shaded boxes – required credits in the bundle for the SHSM–Agriculture
- (C) – compulsory credits for the OSSD
- (R) – courses that are recommended in light of the student's pathway and career interests
- The letters C, E, M, O, and U at the end of course codes indicate the following types of courses: C – college preparation; E – workplace preparation; M – university/college preparation; O – open; U – university preparation
- A list of **all** courses that are approved for inclusion in the bundle of credits for an SHSM–Agriculture is available on the Ministry of Education website, at www.edu.gov.on.ca

| Apprenticeship Training Pathway | | College Pathway | | University Pathway | | Workplace Pathway | |
|---|---|---|---|---|---|---|---|
| **Grade 11** | **Grade 12** | **Grade 11** | **Grade 12** | **Grade 11** | **Grade 12** | **Grade 11** | **Grade 12** |
| An optional or a compulsory credit | An optional or a compulsory credit | An optional or a compulsory credit | An optional or a compulsory credit | An optional or a compulsory credit | An optional or a compulsory credit | An optional or a compulsory credit | An optional or a compulsory credit |
| (C)<br>ENG3E<br>English | (C)<br>ENG4E<br>English | (C)<br>ENG3C<br>English | (C)<br>ENG4C<br>English | (C)<br>ENG3U<br>English | (C)<br>ENG4U<br>English | (C)<br>ENG3E<br>English | (C)<br>ENG4E<br>English |
| (C)<br>MCF3M<br>Functions and Applications | (R)<br>MCT4C<br>Mathematics for College Technology | (C)<br>MCF3M<br>Functions and Applications | MCT4C<br>Mathematics for College Technology | (C)<br>MCR3U<br>Functions | MHF4U<br>Advanced Functions | (C)<br>MEL3E<br>Mathematics for Work and Everyday Life | (R)<br>MEL4E<br>Mathematics for Work and Everyday Life |
| SNC3E<br>Science | SPH4C<br>Physics | SNC3M<br>Science | SPH4C<br>Physics | SPH3U<br>Physics | (R)<br>SCH4U<br>Chemistry | SNC3E<br>Science | (R)<br>SNC4E<br>Science |
| **Agriculture**<br>**Major: Equipment**<br>TTJ3C<br>Transportation Technology | **Agriculture**<br>**Major: Equipment**<br>TTJ4C<br>Transportation Technology | **Agriculture**<br>**Major: Equipment**<br>TTJ3C<br>Transportation Technology | **Agriculture**<br>**Major: Equipment**<br>TTJ4C<br>Transportation Technology | **Agriculture**<br>**Major: Equipment**<br>TDJ3M<br>Technological Design | **Agriculture**<br>**Major: Equipment**<br>TDJ4M<br>Technological Design | **Agriculture**<br>**Major: Equipment**<br>TDJ3E<br>Technological Design | **Agriculture**<br>**Major: Equipment**<br>TDJ4E<br>Technological Design |
| **Agriculture**<br>**Major: Equipment**<br>TTJ3C<br>Transportation Technology | **Agriculture**<br>**Major: Equipment**<br>TTJ4C<br>Transportation Technology | **Agriculture**<br>**Major: Equipment**<br>TTJ3C<br>Transportation Technology | **Agriculture**<br>**Major: Equipment**<br>TTJ4C<br>Transportation Technology | **Agriculture**<br>**Major: Equipment**<br>TTJ3C<br>Transportation Technology | **Agriculture**<br>**Major: Equipment**<br>SPH4U<br>Physics | **Agriculture**<br>**Major: Equipment**<br>TTJ3E<br>Transportation Technology | **Agriculture**<br>**Major: Equipment**<br>TTJ4E<br>Transportation Technology |
| May be used as a (C)<br>Cooperative Education (2 credits)<br>*in either Gr. 11 or Gr. 12* | | May be used as a (C)<br>Cooperative Education (2 credits)<br>*in either Gr. 11 or Gr. 12* | | May be used as a (C)<br>Cooperative Education (2 credits)<br>*recommended in Gr. 11** | | May be used as a (C)<br>Cooperative Education (2 credits)<br>*in either Gr. 11 or Gr. 12* | |
| (R)<br>BDI3C<br>Entrepreneurship: The Venture | (R)<br>CGR4E<br>The Environment and Resource Management | (R)<br>BDI3C<br>Entrepreneurship: The Venture | (R)<br>BAN4E<br>Accounting for a Small Business | (R)<br>SCH3U<br>Chemistry | (R)<br>MCV4U<br>Calculus and Vectors | (R)<br>BDP3O<br>Entrepreneurship: The Enterprising Person | (R)<br>BOG4E<br>Business Leadership: Becoming a Manager |

* Students in the university pathway are advised to complete their cooperative education credits in Grade 11, in order to allow room in their timetables in Grade 12 for credits needed to meet university entrance requirements.



Draft 2007–2008

# E. Occupations in the Agriculture Sector

The National Occupational Classification (NOC) is a system that describes and classifies all occupations in Canada using four-digit codes called National Occupation Codes (NOCs). This system and the codes are the authoritative source for occupational information in Canada. Entering one of these four-digit codes in the "Quick Search" box on the NOC website (http://www23.hrdc-drhc.gc.ca/2001/e/generic/welcome.shtml) provides occupational information related to that career.

For more information on occupations, go to the Ontario Skills Passport website (http://skills.edu.gov.on.ca), click on "Occupations and Tasks" in the navigation bar, select "Sorted by NOC", and click on the "Sample Workplace Tasks" checkmark for one of the occupations to view a description of the occupation, an overview of the Essential Skills required in the occupation, a list of sample tasks for the occupation, and assessment tools and other career and employment information related to the occupation.

The following are examples of occupations in the agriculture sector, with corresponding NOC codes, sorted according to the type of postsecondary education or training the occupations would normally require.

*Note:* Some of the names of occupations given below may differ slightly from the names in the NOC. The names listed here reflect common usage by institutions and organizations in this sector in Ontario.

**Apprenticeship Training**

- Arborist 2225
- Blacksmith 7266
- Dairy Herdsperson 8253
- Farm Equipment Technician 7312
- Fruit Grower 8251
- Horse Groom 6483
- Parts Person 1472
- Swine Herdsperson 8253

**College**

- Agricultural Equipment and Supplies Technical Salesperson 6221
- Customer Support Representative 6221
- Farmer and Farm Manager 8251
- Technical Sales Specialist 6221
- Veterinary Equipment and Supplies Salesperson 6221
- Winery and Viticulture Technician 8251

| University | Workplace |
| --- | --- |
| • Agricultural Chemist 2112<br>• Agricultural Inspector (2222<br>• Agronomist 2123<br>• Chemical Engineer 2134<br>• Mechanical Engineer 2132<br>• Soil Scientist 2115<br>• Veterinarian 3114 | • General Farm Worker 8431<br>• Greenhouse Worker 8432<br>• Harvesting Labourer 8611<br>• Mechanic Helper 7612<br>• Pet Groomer and Animal Care Worker 6483<br>• Specialized Livestock Worker 8253 |

# F. Postsecondary Programs and Training Related to Careers in the Agriculture Sector

The following are examples of programs and training related to careers in the agriculture sector and the accreditations or types of accreditation each results in:

**Apprenticeship Training**

| | |
|---|---|
| Arborist | Certificate of Apprenticeship/ Certificate of Qualification |
| Blacksmith | Certificate of Apprenticeship/ Certificate of Qualification |
| Dairy Herdsperson | Certificate of Apprenticeship/ Certificate of Qualification |
| Farm Equipment Mechanic | Certificate of Apprenticeship/ Certificate of Qualification |
| Farm Equipment Technician | Certificate of Apprenticeship/ Certificate of Qualification |
| Heavy Equipment Operator (Heavy Equipment Techniques) | Certificate of Apprenticeship/ Certificate of Qualification |
| Horse Groom | Certificate of Apprenticeship/ Certificate of Qualification |
| Horse Harness Maker | Certificate of Apprenticeship/ Certificate of Qualification |
| Hydraulics/Pneumatics Mechanic | Certificate of Apprenticeship/ Certificate of Qualification |
| Motive Power Techniques | Certificate of Apprenticeship/ Certificate of Qualification |
| Saddlery Maker | Certificate of Apprenticeship/ Certificate of Qualification |
| Swine Herdsperson | Certificate of Apprenticeship/ Certificate of Qualification |

| College | |
|---|---|
| Agriculture Diploma | Diploma |
| Animal Care | Diploma |
| Blacksmith | Diploma |
| Greenhouse Technician | Diploma |
| Veterinary Assistant | Diploma |
| Veterinary Technology | Diploma |
| Winery and Viticulture | Diploma |

| University | |
|---|---|
| Agricultural Business/Economics | Bachelor's degree |
| Agricultural Science/Organic Agriculture | Bachelor's degree |
| Agriculture | Diploma |
| Agriculture – Equine | Diploma |
| Agronomy | Bachelor's degree |
| Animal Science/Zoology | Bachelor's degree |
| Bio-Resource Management | Bachelor's degree |
| Environmental Economics and Policy | Bachelor's degree |
| Plant Biology | Bachelor's degree |
| Veterinary Medicine | Bachelor's degree |

| Training for the Workplace | |
|---|---|
| Business Management | Certificate |
| Coaching and Horsemanship | Certificate |
| Equine Management | Certificate |
| Welding Techniques | Certificate |

# G. Resources

### Associations and Other Professional Groups

| | |
|---|---|
| 4-H Association – Canada | www.4-h-canada.ca |
| 4-H Association – Ontario | www.4-hontario.ca |
| AGCare | www.agcare.org |
| AG Dealers | www.agdealer.com |
| Agriculture and Agri-Food Canada | www.agr.gc.ca |
| Alliance of Sector Councils | www.councils.org |
| Canadian Food Inspection Agency | www.inspection.gc.ca |
| Canadian Horticultural Council | www.hortcouncil.ca |
| Canadian Meat Council | www.cmc-cvc.com |
| Canadian Organic Growers | www.cog.ca |
| Canadian Poultry | www.cpepc.ca |
| Canadian Sheep Federation | www.cansheep.ca |
| Chicken Farmers of Ontario | www.cfo.on.ca |
| Christian Farmers Federation of Ontario | www.christianfarmers.org |
| Community Futures | www.ontcfdc.com |
| Conference Board of Canada | www.conferenceboard.ca |
| Corn Producers Association | www.ontariocorn.org |
| Ecological Farmers Association of Ontario | www.efao.ca |
| Egg Farmers of Ontario | www.getcracking.ca |
| Fluid Power Society | www.ifps.org/ |
| Fruit Wineries of Ontario | www.fruitwinesofontario.com |
| Grape Growers of Ontario | www.grapegrowersofontario.com |
| Junior Farmers Association | www.jfao.on.ca |
| National Farmers Union | www.nfu.ca |

| | |
|---|---|
| Ontario Agri-Business Association | www.oaba.on.ca |
| Ontario Agri-Food Education (OAFE) | www.oafe.org |
| Ontario Apple Growers | www.onapples.com/ |
| Ontario Bee Keepers' Association | www.ontariobee.com |
| Ontario Berry Growers Association | www.ontarioberries.com |
| Ontario Canola Growers' Association | www.ontariocanolagrowers.ca |
| Ontario Cattleman's Association | www.cattle.guelph.on.ca |
| Ontario Commercial Rabbit Growers Association | www.ocrga.ca |
| Ontario Cooperative Education Association | www.ocea.on.ca |
| Ontario Council for Technology Education (OCTE) | www.octe.on.ca |
| Ontario Dairy Goat Cooperative | www.ontariodairygoat.com |
| Ontario Dairy Sheep Association | www.ontariodairysheep.org |
| Ontario Farm Animal Council | www.ofac.org |
| Ontario Farm Fresh Marketing Association | www.ontariofarmfresh.com |
| Ontario Federation of Agriculture | www.ofa.on.ca |
| Ontario Greenhouse Vegetable Growers | www.ontariogreenhouse.com |
| Ontario Horticultural Association | www.gardenontario.org |
| Ontario Maple Syrup Producers Association | www.ontariomaple.com |
| Ontario Pork | www.ontariopork.on.ca |
| Ontario Pork Industry Council | www.opic.on.ca |
| Ontario Potato Board | www.ontariopotatoes.ca |
| Ontario School Counsellors' Association | www.osca.ca |
| Ontario Sheep Marketing Agency | www.ontariosheep.org |
| Ontario Soil and Crop Improvement Association | www.ontariosoilcrop.org |
| Ontario Soybean Growers | www.soybean.on.ca |
| Ontario Tender Fruit Producers' Marketing Board | www.ontariotenderfruit.ca |
| Ontario Wheat Producers' Marketing Board | www.ontariowheatboard.com |
| Skills Canada | www.skillscanada.com |
| Skills Canada–Ontario | www.skillsontario.com |

### Careers

| | |
|---|---|
| Apprenticeship Search | www.apprenticesearch.com |
| Canada Job Futures | www.jobfutures.ca/ |
| Career Cruising | www.careercruising.com |
| Employment Ontario | www.edu.gov.on.ca/eng/tec/etlanding.html |
| Job Bank | www.jobbank.gc.ca |
| Labour Market Information | www.labourmarketinformation.ca/ |
| Ontario Prospects | www.ontarioprospects.info |
| Ontario Skills Passport (OSP) | http://skills.edu.gov.on.ca |
| Ontario WorkInfoNet | www.onwin.ca/english |
| Statistics Canada | www.statcan.ca |
| Youth Opportunities Ontario | www.youthjobs.gov.on.ca |

### Education/Government

| | |
|---|---|
| Applications of Working and Learning National Project | www.awal.ca/about.asp |
| Federal Resources for Educational Excellence | www.free.ed.gov |
| Independent Learning Centre | www.ilc.org |
| Industry Canada | www.ic.gc.ca/epic/site/ic1.nsf/en/home |
| Ministry of Agriculture, Food and Rural Affairs | www.omafra.gov.on.ca |
| Ministry of Education | www.edu.gov.on.ca |
| Ministry of Labour | www.labour.gov.on.ca |
| Ministry of Research and Innovation | www.mri.gov.on.ca |
| Ministry of Small Business and Entrepreneurship | www.sbe.gov.on.ca |
| Ministry of Training, Colleges and Universities (MTCU) | www.edu.gov.on.ca/eng/tcu |
| Ontario College Application Service | www.ontariocolleges.ca |
| Ontario Universities' Application Centre | www.ouac.on.ca |
| Passport to Prosperity | www.edu.gov.on.ca/passport |
| Towes: How Do Your Skills Measure Up? Skill Plan | http://measureup.towes.com |

## Safety, Training, and Certifications

| | |
|---|---|
| Agricorp | www.agricorp.com |
| Canada Safety Council (CSC) | www.safety-council.org/ |
| Canada–Ontario Environmental Farm Plan | www.omafra.gov.on.ca/english/environment/efp/efp.htm |
| Canadian Centre for Occupational Health and Safety (CCOHS) | www.ccohs.ca/ |
| Canadian Red Cross Society | www.redcross.ca |
| Farm and Ranch Safety and Health Association | www.farsha.bc.ca |
| Farm Safety Association | www.farmsafety.ca |
| Industrial Accident Prevention Association (IAPA) | www.iapa.ca |
| Interprovincial Standards Red Seal Program | www.red-seal.ca |
| Life Saving Society | www.lifesaving.ca/ |
| Live Safe! Work Smart! | www.livesafeworksmart.net |
| Ontario Pesticide Education Program | www.opep.ca |
| Passport to Safety | www.passporttosafety.com |
| Prevention Dynamics | www.preventiondynamics.com |
| St. John Ambulance | www.sja.ca |
| Virtual WHMIS | www.virtualwhmis.com |
| Workplace Safety and Insurance Board (WSIB) | www.wsib.on.ca |
| Young Worker | www.prevent-it.ca |

# H. Appendices

## Appendix A: Contextualized Learning Activities (CLAs) for the Specialist High Skills Majors

For the "other required credits" in the bundle of credits, students in a Specialist High Skills Major program must complete learning activities that are contextualized to the knowledge and skills relevant to the economic sector of the SHSM. Contextualized learning activities (CLAs) address curriculum expectations in these courses.

CLAs must take a minimum of 6 hours to complete. Boards may choose to develop one activity that takes 6 hours to complete or two or more activities that together take a minimum of 6 hours to complete.

This template must be used to describe the CLAs. The completed form must be submitted to the Ministry of Education for approval.

## Contextualized Learning Activity (CLA) Template

*Submit all material in Microsoft Word.*

Contact Information

Board: _____

Development date: _____

Contact person: _____

Position: _____

Phone: (  )_____-_____ Fax: (  )_____-_____ E-mail: _____

| | |
|---|---|
| **Specialist High Skills Major** | |
| **Course code and course title** | |
| **Name of contextualized learning activity/activities** | |

*(continued)*

**Appendix A** *(continued)*

| | |
|---|---|
| **Brief description of contextualized learning activity/activities** | |
| **Duration** | *(A minimum of 6 hours to complete the CLA(s) is required.)* |
| **Overall expectations** | *(Identify the overall expectation(s) to be assessed and/or evaluated through the CLA(s). Include strand title(s).)* |
| **Specific expectations** | *(Identify the specific expectations related to the above overall expectation(s) that are addressed in the instructional and assessment strategies of the CLA(s). Include strand title(s) and suborganizer(s).)* |
| **Essential Skills and work habits from the OSP** | *(List the Essential Skills and work habits from the OSP that are addressed in the CLA(s).)* |
| **Catholic graduate expectations (if applicable)** | |

## Instructional/Assessment Strategies

**Teacher's Notes** *(Provide suggestions that will assist the teacher in delivering the CLA(s). For example, remind teachers to make sure that handouts, such as authentic workplace materials/documents used by the sector, are available for the activity.)*

**Context** *(Describe the workplace context for the activity/activities.)*

**Strategies** *(In point form, describe the sequence of instructional and assessment strategies that will support the intended learning. Attach all student handouts and worksheets.)*

## Assessment and Evaluation of Student Achievement – Summary

*(List all assessment and evaluation strategies and tasks, based on the strategies identified in the preceding section. Attach checklists, rubrics, correction keys, etc.)*

| **Strategies/Tasks**<br>*(add rows as required)* | **Purpose**<br>Assessment for learning (diagnostic, formative) *OR*<br>Assessment of learning (summative; for evaluation) |
|---|---|
| 1. | |
| 2. | |
| 3. | |
| 4. | |
| 5. | |
| 6. | |

## Additional Notes/Comments/Explanations

*(Provide additional suggestions for teachers that will help them deliver the CLA(s).)*

## Resources

*(List all the resources needed to support the implementation of the CLA(s).)*

**Authentic Workplace Materials** *(e.g., blueprints, workplace manuals, specification sheets, spreadsheets)*

**Human Resources**

**Print**

**Video/DVD**

**Software**

**Websites**

**Other**

## Accommodations

*(List instructional, environmental, and assessment accommodations.)*

## List of Attachments

*(Attach all related materials, e.g., student worksheets, tests, rubrics.)*

## Appendix B: Forms of Experiential Learning and Related Programs

| Length | Credit Value | Description | Key Elements |
|---|---|---|---|
| **Job shadowing** | | | |
| 1/2 to 1 day (in some cases, up to 3 days) | none | one-on-one observation of a worker at a place of employment | • involves the pairing of a student with a worker in a specific occupation<br>• may be integrated with a credit course<br>• may be part of a student's school–work transition program |
| **Job twinning** | | | |
| 1/2 to 1 day | none | one-on-one observation of a cooperative education student at his or her placement | • involves the pairing of a student with a cooperative education student<br>• may be integrated with a credit course<br>• may be part of a student's school–work transition program |
| **Work experience** | | | |
| 1–4 weeks | none | a planned learning opportunity, within any credit course, that provides students with relatively short-term work experiences, usually of one or two weeks' duration and not exceeding four weeks | • involves a short-term, subject-related work placement<br>• forms an integral part of a specific credit course<br>• requires pre-placement orientation<br>• requires a personalized placement learning plan |
| **Virtual work experience** | | | |
| the equivalent of 1–4 weeks | none | a simulated work experience, within any credit course, that allows students, including students who receive a special education program or services and students in rural areas, to take advantage of a greater variety of experiences than those available in the local economy | • involves a short-term, subject-related virtual work placement facilitated through the use of computer software and the Internet<br>• forms an integral part of a specific credit course<br>• requires pre-placement orientation<br>• requires a personalized placement learning plan |
| **Cooperative education** | | | |
| full term (year or semester) | 1 credit per 110-hour cooperative education credit course successfully completed | a planned learning experience, for which credits are earned, that integrates classroom theory and learning experiences at a workplace to enable students to apply and refine the knowledge and skills acquired in a related curriculum course or a locally developed course | • requires a personalized placement learning plan<br>• involves the earning of credits<br>• requires 15 hours of pre-placement instruction<br>• is monitored by the cooperative education teacher<br>• has a classroom and a workplace component<br>• involves reflective learning<br>• requires 7 hours of integration per co-op credit |

*(continued)*

Appendix B *(continued)*

| Length | Credit Value | Description | Key Elements |
|---|---|---|---|
| **School–work transition programs** | | | |
| varies, but typically not less than 2 years (3–4 semesters over Grades 11 and 12) | varies with type of planned workplace experience | a combination of school- and work-based education and training involving a variety of learning opportunities | • is oriented towards students who will be entering the workforce directly after high school<br>• involves the development of partnerships with employers<br>• involves the enhancement of curriculum with input from employers<br>• involves the earning of cooperative education credits |
| **Ontario Youth Apprenticeship Program (OYAP)** | | | |
| varies, but typically not less than 2 years (3–4 semesters over Grades 11 and 12) | varies with opportunities | an opportunity for a student to meet diploma requirements while participating in an apprenticeship occupation | • is designed for students 16 years of age and older who have already earned 16 credits towards the OSSD<br>• may involve the student's registration in an apprenticeship<br>• requires documentation by the student and trainer regarding trade-specific competencies acquired<br>• involves the earning of cooperative education credits |

(From Ontario Ministry of Education, *Cooperative Education and Other Forms of Experiential Learning: Policies and Procedures for Ontario Secondary Schools, 2000*, pp. 7–8)

## Appendix C: Minimum Age to Work in and Visit Ontario Workplaces[1]

| Specialist High Skills Major[2] | Type of Workplace | Minimum Age to Work | Minimum Age to Visit / Conditions for Visiting[3] |
|---|---|---|---|
| • Arts and Culture<br>• Business<br>• Health and Wellness<br>• Hospitality and Tourism | Industrial establishments,[4] such as offices, stores, arenas, restaurant serving areas | 14 | The regulation governing industrial establishments (Reg. 851, R.R.O. 1990) made under the OHSA sets out minimum age restrictions for workers, covering workplaces such as offices, stores, arenas, restaurants, and factories. However, the regulation states that people younger than the specified minimum age to work may *visit* (but not *work in*) these establishments if:<br>• they are accompanied by a person who has attained the age of majority (i.e., 18 years of age);<br>• they are being guided on a tour of the industrial establishment (e.g., office, store, arena, or factory);<br>• they are in an area of the industrial establishment used for sales purposes; or<br>• they are in an area of the establishment to which the public generally has access. |
| • Business<br>• Hospitality and Tourism<br>• Manufacturing<br>• Transportation | Most factories,[5] including restaurants and any commercial kitchens, automotive service garages, produce and meat preparation or shipping and receiving areas in grocery stores, laundries, and warehouses | 15 | |
| • Forestry | Logging operations[6] | 16 | |
| • Construction | Construction project[7] | 16<br>Under the regulation governing construction projects (O. Reg. 213/91) made under the OHSA, 16 is the minimum age to work on *or* to visit *any* construction project. A person under the age of 16 may *visit* a construction site *only when work is not being performed there*. (Note that the definitions of *construction* and *construction project* include a wide variety of types of work and workplaces. It is important to review the definitions carefully. See note 7, below.) | |

All notes appear on pages 36–38.

*(continued)*

**Appendix C** ***(continued)***

| Specialist High Skills Major[2] | Type of Workplace | Minimum Age to Work | Minimum Age to Visit / Conditions for Visiting[3] |
|---|---|---|---|
| • Mining | Surface mines,[8] mining plants[9]<br>Underground mine<br>Working face of a surface mine | 16<br>18<br>18 | The regulation governing mines and mining plants (Reg. 854, R.R.O. 1990) made under the OHSA allows for tours or visits to mines and mining plants by persons who are younger than the specified minimum age to work if they are accompanied by and under the direction of a guide. |
| • Agriculture<br>• Arts and Culture<br>• Environment<br>• Health and Wellness<br>• Horticulture and Landscaping | Certain workplaces (or parts thereof) may be covered, with respect to age restrictions, by regulations governing other sectors. For example, see the industrial establishments regulation (Reg. 851, R.R.O. 1990). | | |
| • Construction<br>• Manufacturing | Window cleaning | 18 | *Not applicable.*<br>(The regulation governing window cleaning is Reg. 859, R.R.O. 1990.) |

## Notes to Appendix C

1. As specified in regulations made under the Occupational Health and Safety Act (OHSA). Other statutes and regulations made under those statutes also set minimum ages for various occupations.

   In addition, some workplaces have established their own, *more stringent* minimum ages for employment. For instance, some retail establishments and restaurant chains will not hire anyone under the age of 16, even though the legislated minimum age limit is lower. Similarly, some industrial establishments, and other workplaces that require the use of heavy equipment or machinery, will not hire anyone under the age of 18, even though the legislated minimum age limit might be lower. Such in-house minimum age requirements may be acceptable, as long as the limits do not conflict with the Ontario Human Rights Code or other applicable law.

2. Column 1 identifies the Specialist High Skills Majors with which the workplace categories in column 2 may be associated. Note, however, that some specialist programs may involve workplaces identified in more than one category (e.g., a business program may involve offices, factories, and construction sites). When using this chart to verify compliance

with minimum age to work and visit requirements, always refer to the particular type of workplaces involved in the program (column 2), not to the sector to which the program relates (column 1).

3. Under certain conditions, as identified in this table, persons younger than the minimum age to work may visit, *but not work in*, certain workplaces.

4. According to the OHSA, ***industrial establishment*** means an office building, factory, arena, shop or office, and any land, buildings and structures appertaining thereto.

5. According to the OHSA, ***factory*** means

   a) a building or place other than a mine, mining plant or place where homework is carried on, where,

      i) any manufacturing process or assembling in connection with the manufacturing of any goods or products is carried on,

      ii) in preparing, inspecting, manufacturing, finishing, repairing, warehousing, cleaning or adapting for hire or sale any substance, article or thing, energy is,

         (A) used to work with any machinery or device, or

         (B) modified in any manner,

      iii) any work is performed by way of trade or for the purposes of gain in or incidental to the making of any goods, substance, article or thing or part thereof,

      iv) any work is performed by way of trade or for the purposes of gain in or incidental to the altering, demolishing, repairing, maintaining, ornamenting, finishing, storing, cleaning, washing or adapting for sale of any goods, substance, article or thing, or

      v) aircraft, locomotives, or vehicles used for private or public transport are maintained,

   b) a laundry including a laundry operated in conjunction with,

      i) a public or private hospital,

      ii) a hotel, or

      iii) a public or private institution for religious, charitable or educational purposes, and

   c) a logging operation.

6. According to the OHSA, ***logging*** means the operation of felling or trimming trees for commercial or industrial purposes or for the clearing of land, and includes the measuring, storing, transporting or floating of logs, the maintenance of haul roads, scarification, the carrying out of planned burns and the practice of silviculture.

7. According to the OHSA, ***construction*** includes erection, alteration, repair, dismantling, demolition, structural maintenance, painting, land clearing, earth moving, grading, excavating, trenching, digging, boring, drilling, blasting or concreting, the installation of any machinery or plant, and any work or undertaking in connection with a project but does not include any work or undertaking underground in a mine.

***Project*** means a construction project, whether public or private, including,

a) the construction of a building, bridge, structure, industrial establishment, mining plant, shaft, tunnel, caisson, trench, excavation, highway, railway, street, runway, parking lot, cofferdam, conduit, sewer, water main, service connection, telegraph, telephone or electrical cable, pipe line, duct or well, or any combination thereof,

b) the moving of a building or structure, and

c) any work or undertaking, or any lands or appurtenances used in connection with construction.

8. According to the OHSA, ***mine*** means any work or undertaking for the purpose of opening up, proving, removing or extracting any metallic or non-metallic mineral or mineral-bearing substance, rock, earth, clay, sand or gravel.

9. According to the OHSA, ***mining plant*** means any roasting or smelting furnace, concentrator, mill or place used for or in connection with washing, crushing, grinding, sifting, reducing, leaching, roasting, smelting, refining, treating or research on any substance mentioned in the definition of "mine" (see note 8, above).

## Appendix D: Locally Developed Courses

### 1. Course Summary for SHSM–Agriculture, *Animal Science*, Open – SAN33

**Board:** Bluewater District School Board

**Course Description**

This course focuses on the processes involved in the biological systems of animals, both domestic and wild. Students learn concepts and theories related to animal anatomy and physiology, adaptations, nutrition, and the immune system and defences against disease. Throughout the course, emphasis is placed on the practical application of concepts. Career opportunities related to biology and working with animals are explored. The course offers a focused experience for students considering direct entry into the workforce or pursuing postsecondary education in related fields.

**Topics in this course include:**

- animal biology
- stewardship of animals
- animal breeding
- animal welfare

Students also undertake a research project.

### 1. Course Summary for SHSM–Agriculture, *Horticulture*, Open – SHX33

**Board:** Bluewater District School Board

**Course Description**

This course introduces students to the knowledge and skills of horticulture. Students have the opportunity to be involved in the growing and marketing of a greenhouse crop. Emphasis in classroom activities is on the investigation of plant science, trends in the horticultural industry, and career opportunities.

**Topics in this course include:**

- plant science: structures and growth factors
- greenhouse structures and materials and the environment
- culture and propagation
- production
- gardening and landscaping

# *Program Profiles*

# *Program Profile:* Bluewater District School Board

| | |
|---|---|
| **Name of Initiative** | **Agri-Business** |
| **Brief description** | This program focuses on animal and crop science, horticulture, and the business aspects of farming. Students have the opportunity to work with farm animals and plants in a barn and greenhouse facility on the school property. The program is delivered in an integrated way and includes cooperative education placements for students in the agricultural sector. |
| **Number of students** | 22 |
| **Board** | **Bluewater District School Board**<br>351-1st Ave North<br>Box 190<br>Chesley ON N0G 1L0 |
| **Board contact** | Name: Jean Stephenson<br>Title: Student Success Leader<br>Phone: 519-363-2014<br>Fax: 519-363-3448<br>E-mail: Jean_Stephenson@bwdsb.on.ca |
| **School** | **Chesley District High School**<br>231-4th Ave South East<br>Chesley ON N0G 1L0 |
| **School contact** | Name: Ron Code<br>Title: Principal<br>Phone: 519-363-2344<br>Fax: 519-363-3449<br>E-mail: Ron_code@bwdsb.on.ca |
| **Partners:**<br>**Business/Community** | - B & L Farm Services Ltd<br>- Berry Bush Farms<br>- Bruce-Grey-Huron-Perth Georgian Triangle Training Board<br>- Chesley Kinsmen Club<br>- Elmcrest Farms<br>- Grey County Agricultural Services<br>- Huron Bay Cooperative and Land of Lakes Feeds<br>- Keady Livestock Market<br>- Ontario Federation of Agriculture<br>- Ontario Ministry of Agriculture, Food and Rural Affairs (OMAFRA)<br>- Saugeen Economic Development Corporation |
| **College** | Georgian College, Owen Sound Campus |
| **University** | University of Guelph – Ridgetown Campus |

# *Program Profile:* Conseil des écoles publiques de l'Est de l'Ontario

| | |
|---|---|
| **Name of Initiative** | **La Maison familiale rurale** |
| **Brief description** | This program is offered in partnership with La Maison familiale rurale, the RDEE (Réseau de développement économique et d'employabilité) and Alfred Campus. It has an internship component managed by the local producers' cooperative and an academic component managed by Conseil des écoles publiques de l'Est de l'Ontario (CEPEO). Students alternate between two weeks of school-based courses and two weeks of practical experience in cooperative education work placements. The program is designed as an extension of the program offered in partnership with the Centre d'éducation et de formation de l'Est ontarien (CEFEO). |
| **Number of students** | 15 |
| **Board** | **Conseil des écoles publiques de l'Est de l'Ontario**<br>2445, boulevard St-Laurent<br>Ottawa ON K1G 6C3 |
| **Board contact** | Name: Suzanne Moncion<br>Title: Surintendante de l'éducation<br>Phone: 613-742-8960 ext. 3845<br>Fax: 613-842-8740<br>E-mail: Suzanne.moncion@cepeo.on.ca |
| **School** | **École secondaire publique Le Sommet**<br>894, boulevard Cécile<br>Hawkesbury ON K6A 3N9 |
| **School contact** | Name: Stéphane Besner<br>Title: Enseignant<br>Phone: 613-632-6059<br>Fax: 613-632-7808<br>E-mail: stephane.besner@cepeo.on.ca |
| **Partners:**<br>**Business/Community** | - Dairy Farmers of Ontario<br>- La Maison familiale rurale<br>- Réseau de développement économique et d'employabilité (RDEE) |
| **University** | Campus d'Alfred – Université de Guelph |

# *Program Profile:* Huron-Perth Catholic District School Board

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|---|---|
| **Name of Initiative** | **Direct Connect Your Future: Ag-Tech / Agri-Business** |
| **Brief description** | The program focuses on farm equipment. It offers students an opportunity to work in the transportation technology field with an emphasis on the business of large farm equipment. It enables students to develop the specialized knowledge and skills required to work in the areas of agricultural electronics, hydraulics, equipment, and business. These skills include repairing, testing, and maintaining tractors, trucks, combines, and milking and feeding systems. Students also receive specialized training in welding and cutting equipment. They work with engines, machines, tools, and materials used in agriculture and solve problems related to farm and heavy equipment systems. In addition, students are educated in livestock medicine, grain grading, and pesticide handling. Farm safety awareness is always a primary focus. |
| **Number of students** | 42 |
| **Board** | **Huron-Perth Catholic District School Board**<br>PO Box 70, 87 Mill St<br>Dublin ON N0K 1E0 |
| **Board contact** | Name: Tim Martens<br>Title: OYAP Project Leader<br>Phone: 519-345-2440 ext. 328<br>Fax: 519-345-2449<br>E-mail: tim_martens@hpcdsb.edu.on.ca |
| **School** | **St. Anne's Catholic Secondary School**<br>353 Ontario St<br>Clinton ON N0M 1L0 |
| **School contact** | Name: Sandie Ennett<br>Title: SHSM Special Project Teacher<br>Phone: 519-271-0890<br>Fax: 519-271-8250<br>E-mail: sandie_ennett@hpcdsb.edu.on.ca |
| **Partners:**<br>**Business/Community** | - Farm Safety Association<br>- Huron Tractor<br>- Hyde Bros.<br>- McGavin Farm Equipment<br>- Ontario Ministry of Agriculture, Food and Rural Affairs (OMAFRA)<br>- Vincent Farm Equipment |
| **College** | Fanshawe College |

## *Program Profile:* District School Board Ontario North East

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|---|---|
| **Name of Initiative** | Agri-Tech |
| **Brief description** | This program helps students acquire and apply the skills and knowledge required to successfully participate in the primary industry of farming. Through individual and collaborative inquiry, students analyse relationships among the environment, business, and science as they apply to agriculture in the twenty-first century. They learn about farm safety, farm equipment and repair, and career opportunities in the agriculture industry. |
| **Number of students** | 15–18 |
| **Board** | **District School Board Ontario North East**<br>153 Croatia Ave<br>Box 1020<br>Timmins ON P4N 7H7 |
| **Board contact** | Name: Michelle Leigh<br>Title: Superintendent of Schools<br>Phone: 705-360-1151 ext. 690<br>Fax: 705-268-3228<br>E-mail: michelle.leigh@dsb1.edu.on.ca |
| **School** | **Timiskaming District Secondary School**<br>90 Niven St<br>New Liskeard ON P0J 1P0 |
| **School contact** | Name: Jim Rowe<br>Title: Principal<br>Phone: 1-705-647-7336<br>Fax: 1-705-647-9260<br>E-mail: jim.rowe@dsb1.edu.on.ca |
| **Partners:** | |
| **Business/Community** | • Ag-Nor<br>• Brownlee Equipment<br>• City of Temiskaming Shores<br>• Ebert Welding<br>• Grant Equipment<br>• Inglis Tile Drainage<br>• Koch Agri-Sales<br>• Robert Farms<br>• Temiskaming Federation of Agriculture<br>• Temiskaming Veterinary Services<br>• Tri-Town District of Commerce<br>• Trudel Equipment |

| | |
|---|---|
| **Colleges** | • Collège Boréal<br>• Northern College |
| **Universities** | • University of Guelph<br>• University of Guelph – Kemptville Campus<br>• University of Guelph – Ridgetown Campus |

# *Program Profile:* Conseil scolaire de district des écoles catholiques du Sud-Ouest

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|---|---|
| **Name of Initiative** | **From the Field to the Table** |
| **Brief description** | This program, which focuses on horticulture, landscaping, and farm equipment, is designed to provide opportunities for a targeted group of students to develop skills that will enable them to enter the regional job market or to pursue a postsecondary education. With the active participation of several community partners, the students receive training from and gain work experience with skilled tradespersons. |
| **Number of students** | 15 |
| **Board** | **Conseil scolaire de district des écoles catholiques du Sud-Ouest**<br>7515, promenade Forest Glade<br>Windsor ON N8T 3P5 |
| **Board contact** | Name: Gina Michaud<br>Title: Conseillère pédagogique<br>Phone: 519-948-9227 ext. 272<br>Fax: 519-948-4013<br>E-mail: michgina@csdecso.on.ca |
| **School** | **École secondaire de Pain Court**<br>14, rue Notre Dame, CP 100<br>Pain Court ON N0P 1Z0 |
| **School contacts** | Name: Lou Ann Robert<br>Title: Enseignante<br>Phone: 519-352-1614<br>Fax: 519-352-9442<br>E-mail: robeloua@csdecso.on.ca<br><br>Name: Matthew Mailloux<br>Title: Enseignant<br>Phone: 519-352-1614<br>Fax: 519-352-9442<br>E-mail: mailmatt@csdecso.on.ca |

| Partners: | |
|---|---|
| Business/Community | • Dover Agri-Serve<br>• Ferme Martin<br>• Fry Farms<br>• Glasshouse Nursery & Garden<br>• Sun Master<br>• T.J. Stables<br>• Trevor Robertson |
| Universities | • Campus d'Alfred – Université de Guelph<br>• University of Guelph – Ridgetown Campus |

## *Program Profile:* Thames Valley District School Board

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|---|---|
| Name of Initiative | **The West Elgin Secondary School Agricultural Education Initiative**<br>**The Norwich District Agricultural and Environmental Services Program** |
| Brief description | *West Elgin S.S.:* This program focuses on the key elements of agriculture: plant biology and propagation; earth sciences, including agronomy, soil sampling and analysis, and the use of global positioning system (GPS) technology; farm machinery; landscaping design and equipment maintenance and repair; and agri-business. The initiative provides students living in a rural setting with local experiential learning opportunities, including working with local farmers, local agriculture businesses and machinery dealerships, and the Ridgetown Campus, University of Guelph.<br><br>*Norwich District:* This program is offered with two areas of focus: horticulture and environment, and animal and crop production. The program is designed to provide opportunities at the primary, secondary, and tertiary levels of the agriculture industry. With the horticulture and environment focus, students engage in numerous experiential learning activities in the local market gardening and specialty crop industry, as well as in sector-specific greenhouse operations. The animal and crop production focus provides students with access to learning in the areas of equine, dairy, swine, poultry, and niche market production. Students are also involved with local crop research facilities and have experiential learning opportunities with crop input suppliers. |
| Number of students | 140 |
| Board | **Thames Valley District School Board**<br>Box 5888<br>1250 Dundas St East<br>London ON N6A 5L1 |
| Board contact | Name: John Verbakel<br>Title: Learning Supervisor of Applied Studies<br>Phone: 519-452-2000 ext. 20389<br>Fax: 519-452-2329<br>E-mail: j.verbakel@tvdsb.on.ca |
| School 1 | **West Elgin Secondary School**<br>139 Graham Rd<br>West Lorne ON N0L 2P0 |
| School contact | Name: Larry Schneider<br>Title: Principal<br>Phone: 519-769-1350<br>Fax: 519-768-0534<br>E-mail: l.schneider@tvdsb.on.ca |

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|---|---|
| School 2 | **Norwich District High School**<br>1 Jerdon St<br>Norwich ON N0J 1P0 |
| School contact | Name: Tom McLeod<br>Title: Principal<br>Phone: 519-468-2014<br>Fax: 519-468-2015<br>E-mail: t.mcleod@tvdsb.on.ca |
| Partners: | |
| Business/Community | - Dieleman Farm Equipment<br>- Norwich Chamber of Commerce |
| College | University of Guelph – Ridgetown Campus |

# *Program Profile:* Windsor Essex Catholic District School Board

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|---|---|
| **Name of Initiative** | **Program of Excellence in Horticulture** |
| **Brief description** | This program, located in the heart of North America's largest greenhouse vegetable production area, focuses on greenhouse vegetable and flower production, fruit and ornamental crop production, viticulture, landscape design and construction, and turf management. Students are exposed to all aspects of the industry through the production of commercial vegetable and flower crops in the school's computer-controlled greenhouse facility. They design, construct, and monitor crop layout, irrigation, insect and disease control, environmental controls, and the harvesting and marketing of their crops. |
| **Number of students** | 12 |
| **Board** | **Windsor Essex Catholic District School Board**<br>1325 California Ave<br>Windsor ON N9B 3Y6 |
| **Board contact** | Name: Linda Staudt<br>Title: Superintendent of Education – Student Success<br>Phone: 519-253-2481 ext. 525<br>Fax: 519-253-0620<br>E-mail: linda_staudt@wecdsb.on.ca |
| **School** | **Cardinal Carter Catholic Secondary School**<br>120 Ellison Ave<br>Leamington ON N8H 5C7 |
| **School contact** | Name: Mike St.Pierre<br>Title: Head, Technological Studies<br>Phone: 519-322-2804<br>Fax: 519-839-5625<br>E-mail: mike_stpierre@wecdsb.on.ca |
| **Partners:** | |
| **Business/Community** | - CF Greenhouse<br>- Fresh Pack Produce Ltd<br>- Landscape Ontario<br>- Mastron Enterprises<br>- Ontario Greenhouse Vegetable Growers<br>- South-Western Ontario Industry Education Council<br>- The Ontario Greenhouse Alliance |
| **College** | St. Clair College |
| **Universities** | - University of Guelph<br>- University of Guelph – Ridgetown Campus |